

"CONTINUUM"

OTA Phase Shifter.
Design, layout and documentation by

FREQUENCY CENTRAL

Continuum has its roots in my previous guitar effects pedal designs. First there was Causality 4, then Causality 6, then Gemini Dual Core.

Continuum looks and acts rather like a VCF, in fact that's exactly what a phaser is, an all-pass VCF. There's far more to phasers than just sweeps up and down from an LFO, so Continuum has two CV inputs, so you can use a variety of CV sources simultaneously. Also, try feeding a gate or envelope into one of the audio inputs with the regen at maximum, Continuum loves to be pinged!

The topology of Continuum is 4 swept OTA all-pass filter stages with a fixed all-pass filter stage either side of the swept core. There's a switch to select regen over odd or even stages. Most phasers stick to odd stages, but there are undiscovered sonic possibilities using even stages of regen.

Please note the numbered grey pads which connect to the corresponding lugs of the Odd/Even SPDT – it ain't as easy as ABC!

As for setup of the trimmers, I find it works best with both trimmers fully counter-clockwise – nice wide sweep, correct range. However, if you insist on having the width/range at optimum in the middle of the trimmers' sweep, you can dink about with R41 and R42.

Please observe the correct polarity for the ICs, pin 1 is designated by a square pad. It's also pretty easy to install the ICs 'one pad off' (if you see what I mean) if you're not paying attention.

Electrolytic caps' polarity indicated by square pads for +ve. It doesn't matter which way around you put the diodes, as long as they are back-to-back.

Yeah, quite a few jumpers in this one – sorry! Don't forget to install the eleven (11) jumpers. In fact, do it now before you do forget.

About R46 – there is no R46, although it shows up on the layout and there are pads for it too. I was going to use a 10K resistor there to control/tame the regen, but decided I liked uncontrolled/wild much better!

So...yes it's a phaser, but treat it like a filter. And don't forget to try pinging it!

Colour coding:

Red traces: +12v

Brown traces: Ground

Green traces: -12v

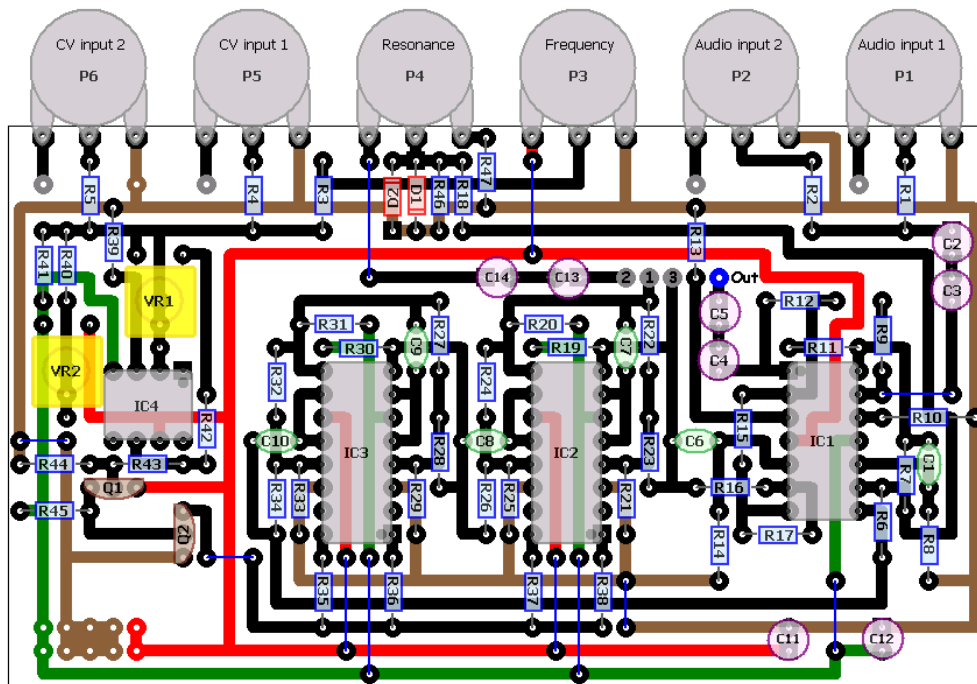
Grey pads: Inputs/Switch

Blue pad: Output

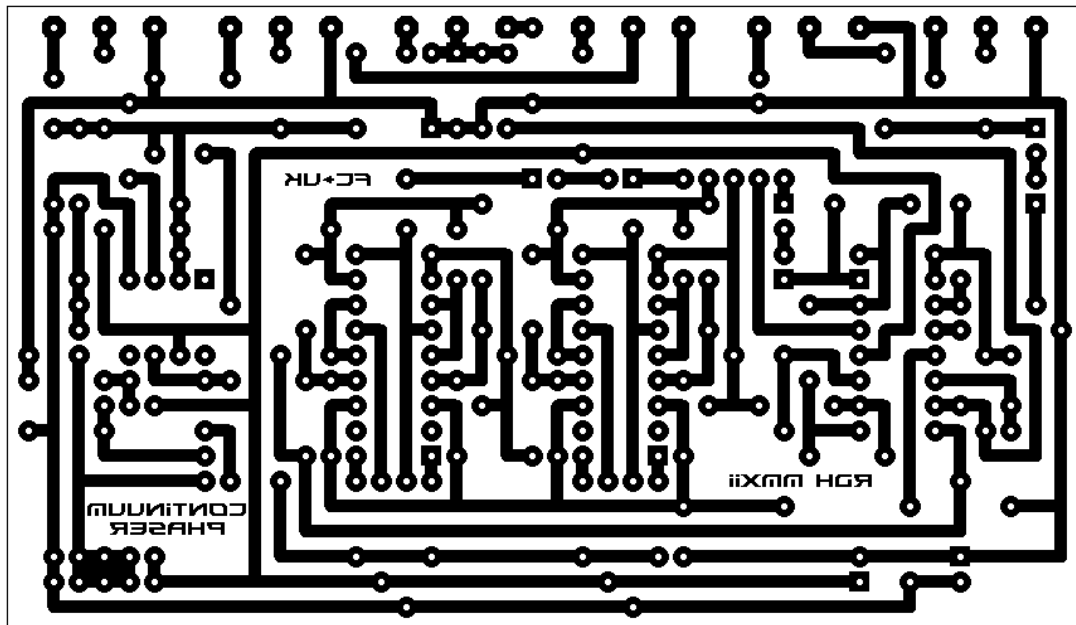
<http://www.frequencycentral.co.uk/>

Continuum Phaser

Design and layout by frequencycentral



Created with freeware DIY Layout Creator by Storm Software
<http://www.storm-software.co.yu/dyl/>



Continuum – Bill of materials

R1: 100K R2: 100K R3: 150K R4: 100K R5: 100K R6: 10K R7: 10K R8: 10K R9: 10K R10: 27K R11: 27K R12: 100K R13: 10K R14: 10K R15: 27K R16: 10K R17: 10K R18: 10K R19: 10K R20: 10K R21: 1.8K R22: 27K R23: 27K R24: 27K R25: 1.8K R26: 27K R27: 27K R28: 27K R29: 1.8K R30: 10K R31: 10K R32: 27K R33: 1.8K R34: 27K R35: 10K R36: 10K R37: 10K R38: 10K R39: 10K R40: 1M R41: 270K R42: 15K R43: 15K R44: 1.5K R45: 100K R46: Not used (see text) R47: 100R (100 Ohm)	C1: 4.7nF C2: 22uF Electrolytic C3: 22uF Electrolytic C4: 22uF Electrolytic C5: 22uF Electrolytic C6: 47nF C7: 10nF C8: 10nF C9: 10nF C10: 10nF C11: 22uF Electrolytic C12: 22uF Electrolytic C13: 22uF Electrolytic C14: 22uF Electrolytic	IC1: TL084 IC2: LM13700 IC3: LM13700 IC4: LF351 Q1: BC547C - NPN Q2: BC557C - PNP	P1: 100K Log P2: 100K Log P3: 100K Lin P4: 100K Log P5: 100K Lin P6: 100K Lin VR1: 10K (width) VR2: 100K (freq) Odd/Even switch: SPDT Jumpers: eleven (11) Numbered grey pads on layout: odd/even switch wiring – watch out for the correct lug numbers!
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